

## REMARKS

Receipt of the office action mailed March 17, 2004, is acknowledged. Claims 1-10 are pending in the application. Claim 8 has been rejected as being indefinite. Claims 1, 5, 6 and 7 have been rejected under 35 U.S.C. § 103(a) over Drobny et al., U.S. Patent Publication 2003/0094435A1 ("Drobny"). Claims 2-4 and 8 have been rejected under 35 U.S.C. § 103(a) over Drobny in view of Wolf et al. Claims 9-10 have been objected to as being dependent upon a rejected base claim. In keeping with the foregoing amendments and the following remarks, claims 1-4, 6, 7, 9 and 10 are in condition for allowance.

At the outset, the applied reference Wolf et al., has not been listed in the "Notice of Reference Cited" form PTO-892. Applicant requests that a new "Notice of References Cited" form be issued that lists Wolf et al. as a cited reference.

Claims 5 and 8 have been cancelled. Therefore, because of the cancellation of claim 8, the rejection of that claim for indefiniteness is now moot.

Claims 1, 5, 6 and 7 have been rejected under 35 U.S.C. § 103(a) over Drobny. Claim 1 has been amended to recite "controlling the impurity concentration of the ion implantation layer by means of a cleaning process, wherein the cleaning process is implemented using a solution of fluoric acid series and a SC-1(NH<sub>4</sub>OH/H<sub>2</sub>O/H<sub>2</sub>O) solution to remove a native oxide film on the surface of the semiconductor substrate." Drobny does not disclose or even suggest controlling the impurity concentration of the ion implantation layer as recited in claim 1.

The Examiner asserts that the step of controlling the impurity concentration of the ion implantation layer by means of a cleaning process of the invention corresponds

to the step of a bake cycle in hydrogen gas which includes HCl or a fluorine based etchant of Drobny. However, the objective of the bake cycle of Drobny is to compensate, reduce, or eliminate auto-doping. Also, the objective of the bake cycle of Drobny is to remove or reduce surface crystal defects in the silicon at the surface of the wafer prior to the beginning of the epitaxial growth portion of the epitaxial process as disclosed in paragraph [0054] of Drobney. In other words, the objective of the bake cycle of Drobny is not to control impurity concentration of the ion implantation layer after performing an ion implantation process. The objective of the bake cycle of Drobny is to reduce or eliminate the auto-doping and surface crystal defects prior to the beginning of the epitaxial growth portion of the epitaxial process.

Therefore, Drobny does not disclose or even suggest that the impurity concentration of the ion implantation layer is controlled through the cleaning process as recited in claim 1. Because Drobny fails to disclose or even suggest controlling the impurity concentration of the ion implantation layer, Drobny cannot be used to establish a *prima facie* case of obviousness for claims 1, 5, 6 and 7. Furthermore, as discussed above, Drobny fails to disclose or even suggest that it would be desirable or even possible to provide controlling the impurity concentration of the ion implantation layer as recited in claim 1, and hence a *prima facie* case of obviousness against claims 1, 5, 6 and 7 has not been and cannot be established. *See In re Sernaker*, 217 U.S.P.Q. 1 (Fed. Cir. 1983) and *Ex Parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. 1985). Therefore, claims 1, 5, 6 and 7 are patentable over Drobney, and the rejection thereof should be withdrawn.

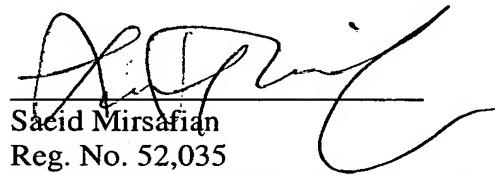
Claims 2-4 have been rejected under 35 U.S.C. § 103(a) over Drobny in view of Wolf et al. Claims 2-4 depend from claim 1. Accordingly, in view of the amendments

presented herein and the above arguments regarding claim 1, the rejection of claims 2-4 should be withdrawn.

In view of the foregoing, claims 1-4, 6, 7 and 9-10 as presented herein are in good and proper form for allowance. A favorable action on the part of the Examiner is respectfully solicited.

The Examiner is invited to contact the undersigned at the telephone number listed below in order to discuss any remaining issues or matters of form that will place this case in condition for allowance.

Respectfully submitted,

  
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